

Title (en)

TOUCH INDUCTOR, EMBEDDED TOUCH LIQUID CRYSTAL DISPLAY PANEL, AND LIQUID CRYSTAL DISPLAY

Title (de)

BERÜHRUNGSEMPFINDLICHER INDUKTOR, EINGEBETTETE BERÜHRUNGSEMPFINDLICHE FLÜSSIGKRISTALLANZEIGETAFEL UND FLÜSSIGKRISTALLANZEIGE

Title (fr)

INDUCTEUR TACTILE, ÉCRAN TACTILE ENCASTRÉ D'AFFICHAGE À CRISTAUX LIQUIDES, ET AFFICHAGE À CRISTAUX LIQUIDES

Publication

**EP 2735948 A1 20140528 (EN)**

Application

**EP 12877080 A 20121204**

Priority

- CN 201210293260 A 20120817
- CN 2012085853 W 20121204

Abstract (en)

The invention discloses a touch sensor, an in-cell touch liquid crystal display panel and a liquid crystal display, where the touch sensor includes a plurality of drive electrodes and a plurality of sense electrodes intersecting each other and having mutual capacitances formed between them ; and a plurality of virtual electrodes is disposed in a remaining area other than an area occupied by the drive electrodes and the sense electrodes, and wherein the virtual electrodes are located in a same layer as the drive electrodes and the sense electrodes. The liquid crystal display panel with an in-cell touch screen according to this technical solution has better transmissivity and high screen brightness; and together with reduced parasitic capacitances between the touch sensor and the other electrodes in the liquid crystal panel than the drive electrodes and the sense electrodes, sufficiently large mutual capacitances can be obtained for detection of a touch sense signal while electrostatic effects caused by a touch of the liquid crystal display panel by an object (e.g., a finger) are eliminated.

IPC 8 full level

**G06F 3/044** (2006.01); **G02F 1/1333** (2006.01); **G06F 3/041** (2006.01)

CPC (source: EP KR US)

**G02F 1/13338** (2013.01 - KR); **G06F 3/0412** (2013.01 - EP KR US); **G06F 3/044** (2013.01 - KR); **G06F 3/0443** (2019.04 - EP US); **G06F 3/0446** (2019.04 - EP US); **G06F 3/0448** (2019.04 - EP US); **H01B 1/02** (2013.01 - KR); **G06F 2203/04111** (2013.01 - EP KR)

Cited by

US9990069B2

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AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

**EP 2735948 A1 20140528**; **EP 2735948 A4 20150422**; **EP 2735948 B1 20200520**; CN 103294294 A 20130911; CN 103294294 B 20180119; KR 101758756 B1 20170717; KR 20140061314 A 20140521; KR 20170029016 A 20170314; WO 2014026449 A1 20140220

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